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TITLE: A Medical Center Network for Optimized Lung Cancer Biospecimen Banking

PRINCIPAL INVESTIGATOR: Christopher A. Moskaluk, M.D., Ph.D.

CONTRACTING ORGANIZATION: University of Virginia
Charlottesville, VA 22908

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14. ABSTRACT The mission statement of the Lung Cancer Biospecimen Resource Network (LCBRN) states that the LCBRN will collect, annotate, store, and distribute human lung cancer biospecimens in a manner that embraces the highest ethical standards for human subjects research, that conforms to the best practices of biorepository science, and that furthers basic, translational and clinical research in the understanding, diagnosis, and treatment of this disease. Year 3 of the award has been spent increasing subject enrollment at all sites, tracking follow-up specimen and data collection, building on the informatics infrastructure to support sample searches and distribution, implementing a rigorous marketing campaign to increase awareness about LCBRN resources, performing histologic and molecular quality control, and serving LCBRN investigators.					
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Section I: Introduction

The mission statement of the Lung Cancer Biospecimen Resource Network (LCBRN) states that the LCBRN “will collect, annotate, store, and distribute human lung cancer biospecimens in a manner that embraces the highest ethical standards for human subjects research, that conforms to the best practices of biorepository science, and that furthers basic, translational and clinical research in the understanding, diagnosis and treatment of this disease”. The specific aims to support this program include: 1) the creation of a Coordinating Center at The University of Virginia (UVA) that provides standard operating procedures (SOPs), standardized specimen collection kits, informatics infrastructure, quality control procedures and specimen storage as well as being the contact site for investigators using the resources of the LCBRN, 2) the creation of Biospecimen Resource Sites at UVA, the Medical University of South Carolina (MUSC) and Washington University in St. Louis (WUSTL) that will recruit subjects with lung cancer and procure the biospecimens, and 3) the establishment of a centralized biobank of high quality tissue, blood, urine, bronchoscopic washing and saliva samples from lung cancer subjects that are annotated to clinical, laboratory and radiographic data.

Section II: Progress

Subject Accrual

UVA, MUSC, and WUSTL received human subjects regulatory approval to begin recruiting patients on 03/17/2011, 04/19/2011, and 04/22/2011 respectively. Since final approval was not obtained until seven months from the start date of the grant period, the LCBRN as a consortium was behind in its recruitment goal of 50 subjects enrolled per site by the end of year 1. All Biospecimen Resource Sites have strived to make up for this deployment lag time by increasing enrollment efforts. As of this reporting period, the LCBRN as a consortium has exceeded the targeted enrollment goal: UVA has recruited a total of 219 subjects, MUSC 164 subjects, and WUSTL 229 subjects for a total number of 612 subject enrollments by the end of year 3. Review of progress will continue to be monitored at the monthly Coordinating Conference calls during which each site is asked to give an update on subject enrollment and follow-up collections.

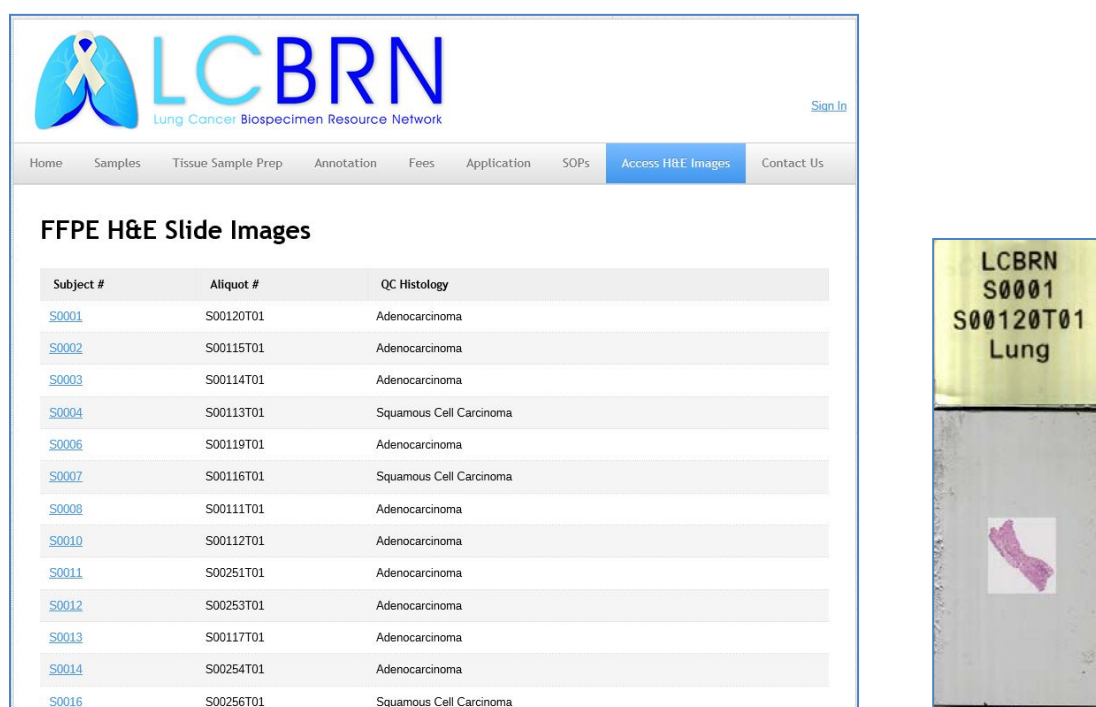
Informatics

The LCBRN’s central database stores subject identification, clinical data and tracks all aspects of biospecimen procurement. The patient, specimen, and QC modules of the database are fully operational and are being used at the Coordinating Center and all Resource Sites. The Informatics team is currently working on the search functions of the LCBRN database which will allow the Coordinating Center to target samples for distribution when responding to an investigator’s query. Figure 1 is a screen shot of the Specimen Search module.

Figure 1. Specimen Search module of the LCBRN Database.

The Coordinating Center is also using several canned reports through JasperServer to help provide feedback to the Resource Sites on procurement activities or to respond to an investigator's query on specimen availability. The informatics team is also working on a system to track investigators information and specimen distribution. The Network Manager currently tracks this data in excel spreadsheets.

There have been several updates to the LCBRN website (<http://www.lcbirn.org>) during the last year. A *Contact Us* page has been added to encourage investigators to interact with the Coordinating Center and discuss the scientific and logistical aspects of their request. Information regarding the number of subjects enrolled, the number of tumors collected and the percentage of enrolled patients in follow-up have been added to the home page of the website and is updated monthly. In addition, an *Access H&E Images* page has been added to the website where investigators can find digital images of all Hematoxylin and Eosin (H&E) stains from formalin fixed paraffin embedded (FFPE) tumors that have undergone quality control (QC). Investigators can select the the subject number of interest and view the whole slide as well as zoom in and out on the image. Figure 2 below shows a screen shot of the webpage and a sample of what the investigator will see after clicking on the link.



LCBRN
Lung Cancer Biospecimen Resource Network

Sign In

Home Samples Tissue Sample Prep Annotation Fees Application SOPs **Access H&E Images** Contact Us

FFPE H&E Slide Images

Subject #	Aliquot #	QC Histology
S0001	S00120T01	Adenocarcinoma
S0002	S00115T01	Adenocarcinoma
S0003	S00114T01	Adenocarcinoma
S0004	S00113T01	Squamous Cell Carcinoma
S0006	S00119T01	Adenocarcinoma
S0007	S00116T01	Squamous Cell Carcinoma
S0008	S00111T01	Adenocarcinoma
S0010	S00112T01	Adenocarcinoma
S0011	S00251T01	Adenocarcinoma
S0012	S00253T01	Adenocarcinoma
S0013	S00117T01	Adenocarcinoma
S0014	S00254T01	Adenocarcinoma
S0016	S00256T01	Squamous Cell Carcinoma

LCBRN
S0001
S00120T01
Lung

Figure 2. Investigators can now access FFPE H&E Images and engage in virtual microscopy on the LCBRN website.

Standard Operating Procedures (SOPs)

SOPs dealing with biorepository activities are available at the LCBRN Collab online resource (<https://collab.its.virginia.edu/portal>) and on the LCBRN public website. New additions include SOP 13, which describes the informatics structure and the processes for requesting access to services.

Table 1: LCBRN SOPs as of 10/11/2013

SOP#	Creation date	SOP Title
LCBRN SOP1	11/18/2010	Establishment, revision & documentation of LCBRN SOPs
LCBRN SOP2	12/17/2010	Tissue Procurement
LCBRN SOP3	11/23/2010	Procurement and aliquoting of serum
LCBRN SOP4	11/23/2010	Procurement and aliquoting of plasma and buffy coat
LCBRN SOP5	11/23/2010	Procurement and aliquoting of urine
LCBRN SOP6	1/23/2010	Procurement and aliquoting of saliva
LCBRN SOP7	11/23/2010	Procurement and aliquoting of bronchial lavage fluid
LCBRN SOP8	11/19/2010	Procurement and aliquoting of sputum
LCBRN SOP9	12/01/2010	Shipping of samples to the LCBRN Coordinating Center
LCBRN SOP10	11/18/2010	Venipuncture
LCBRN SOP11	03/24/2011	Creating LCBRN Specimen Labels
LCBRN SOP12	09/15/2011	Informed Consent
LCBRN SOP 13	04/12/2013	LCBRN Informatics
LCBRN SOP 14	04/12/2013	DNA RNA Protein Isolation-Low Molecular Weight RNA
LCBRN SOP 15	04/12/2013	DNA RNA Protein Isolation-High Molecular Weight RNA
LCBRN SOP 16	06/15/2012	Archival Materials Request

SOP 14 and 15 detail the molecular extraction protocols used to obtain low and high molecular weight RNA. As of this reporting period, however, the LCBRN is only conducting the high molecular weight protocol as part of standard molecular quality control procedures. This change in protocol will be discussed later in this report (See Biospecimen Collection and Quality Control)

Coordination Meetings and Conference calls

Calls and meetings have occurred on the following dates:

10/22/2012 – 2nd Annual LCBRN Coordinating Meeting in Charleston, SC (MUSC Site visit)
 11/14/2012 – LCBRN Database Webinar with EAB, CDMRP, and Coordinating Center
 11/30/2012 – LCBRN Conference Call
 01/18/2013 – LCBRN Conference Call
 02/22/2013 – LCBRN Conference Call
 03/22/2013 – LCBRN Conference Call
 04/26/2013 – LCBRN Conference Call
 05/24/2013 – LCBRN Conference Call
 06/12/2013 – EAB Teleconference
 06/21/2012 – LCBRN Conference Call
 07/26/2013 – LCBRN Conference Call
 08/13/2013 – LCBRN Conference Call
 09/13/2013 – 3rd Annual LCBRN Coordinating Meeting in St. Louis, MO (WUSTL Site visit)

All meeting and conference call minutes are available on the LCBRN Collab Resource Site (<https://collab.itc.virginia.edu/portal>).

The LCBRN conference calls take place on a monthly basis. Topics for conference calls have dealt with subject enrollment, follow-up specimen and data collection, informatics, and specimen quality control.

The 2rd annual LCBRN Coordinating took place in Charleston, SC on 10/22/2012 and was attended by the Co-P.I.'s, Clinical Research Coordinators, Network Manager, biorepository personnel, representatives from the Congressionally Directed Medical Research Program (CDMRP), and the LCBRN patient advocate. Much of the discussion revolved around the 2012 EAB recommendations and resulted in the creation of several new policies which were reviewed and approved for implementation and are outlined below.

- Amend each Resource Sites protocol and consent to allow additional follow-specimen collections 48 hours to 1 month post surgery. All Resource Sites have since received IRB approval for this update.
- Amend each Resource Sites protocol and consent to allow the LCBRN P.I.s to advise a patient's clinician when there is a significant discrepancy in the clinical and research diagnosis that could

potentially alter the patient's therapy. All Resource Sites have since received IRB approval for this update.

- Adopt a new molecular extraction protocol at the Coordinating Center to isolate DNA, RNA, Protein and miRNA. (See SOP #14).

The LCBRN Coordinating Center hosted a webinar for the External Advisory Board (EAB) and the CDMRP to review the LCBRN database on 11/14/2012.

The CDMRP hosted the annual LCBRN EAB meeting via teleconference on 06/12/2013. Highlighted below are some of the key recommendations given by the EAB to the LCBRN.

- Ramp up marketing efforts to increase LCBRN utilization
- Provide a summary description of the all banked biospecimens and frozen tumor tissue that have undergone QC as outlined by the EAB (See Appendix A and Appendix B)
- Increase enrollment beyond the 50 subjects per year minimum at each Resource Site
- Improve fluid processing times to meet the platinum 1 hour standard for blood samples and encourage uniformity in processing times amongst the Resource Sites
- Lower frozen tissue prices by half to help improve investigator utilization
- Stop alternative RNA processing for miRNA on all tumor case (SOP #14). Standard molecular QC (SOP #15) should only be conducted when performing molecular QC does not deplete the tissue sample.

The 3rd annual LCBRN Coordinating took place in St. Louis, MO and on 09/13/2013 and was attended by the Co-P.I.'s, Clinical Research Coordinators, Network Manager, biorepository personnel, and the LCBRN patient advocate. Representatives from the CDMRP attended via teleconference. Important items of discussion that were addressed at the meeting are outlined below.

- Change in P.I. at UVA Resource Site from Dr. David Jones to Dr. James Isbell. UVA's IRB protocol and consent has been updated to reflect this change and Dr. Isbell has been approved by the CDMRP.
- Create a LCBRN newsletter that will be mailed to LCBRN enrolled patients along with a follow-up form that they can mail back to the LCBRN Coordinators. The newsletter will be updated and mailed out annually.
- Presentation of LCBRN biospecimen utilization given by Dr. Chad Denlinger, the P.I. at the MUSC Resource Site, and an LCBRN user.

Biospecimen Collection and Quality Control

Histologic and molecular quality control have been performed at regular intervals on tissue from all 3 Resource Sites. Figure 3 shows the cumulative RNA Quality Index (RQI) for tissue samples as of 09/05/2013. RQI values of 7 or above indicate excellent quality RNA, values between 4 and 7 are considered moderate, and any values below 4 indicate poor quality RNA. The majority of tissue samples from all LCBRN Resource Sites fall into the moderate to excellent quality range.

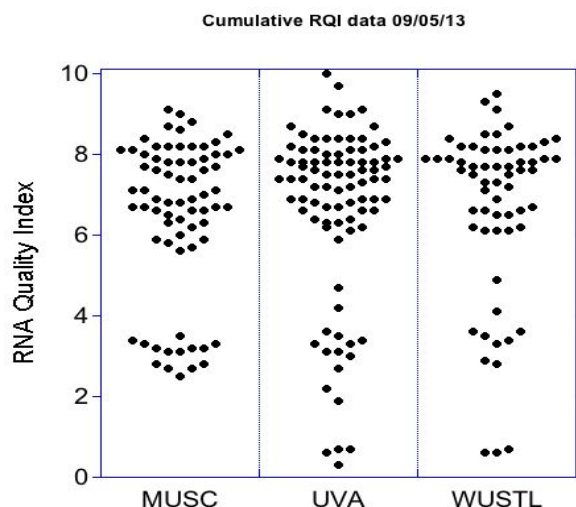


Figure 3: RNA RQI Scores of tissue samples from each Resource Site

In the 2012 EAB meeting, the EAB recommended the LCBRN develop a plan for RNA extraction that allowed investigators interested in microRNA analysis to have RNA preparations suited for this purpose. The LCBRN complied with this suggestion and started extracting tissue samples following the guidelines written in LCBRN SOP #14. Using this method, however, resulted in a marked decrease in RNA quality based on the RQI algorithm. For this reason, the LCBRN decided to start performing two types of RNA extraction on all tissue samples: the newly adopted method outlined in SOP #14 that utilizes organic extraction (Trizol) and alcohol precipitation and obtains both high and low molecular weight RNA, and a silica based RNA isolation (SOP #15) which provides a more accurate representation of sample quality. At the 2013 EAB meeting, however, the EAB stated that although they recognize the value of providing pre-extracted nucleic acids and proteins as a measure to conserve and extend tissue samples resources, they suggested that the LCBRN only perform these extractions at an investigators request. The Coordinating Center has complied with this recommendation but continues to perform molecular quality control using the silica based extraction method as agreed upon in the original Statement of Work.

The EAB also raised concerns about the lack of quality control for biofluid samples being processed by the LCBRN. In their opinion, blood should be collected and processed within 1 hour to be considered platinum status, and even if samples processed within 1 hour is not achievable, all Resource Sites should be processing biofluids within the same time frame. In their response to the EAB, the LCBRN contended that due to the workflow variation at each Resource Site, which is further complicated by the distance between key facilities and lack of manpower, very little can be done to improve the fluid processing times by a substantial amount. However, upon analyzing the biofluid processing times at each Resource Site, the processing times amongst the sites is fairly consistent with a mean time of 2 hours.

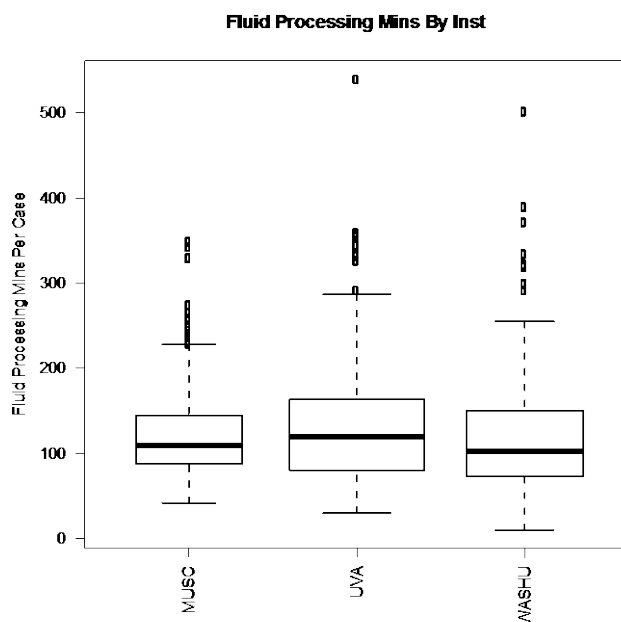


Figure 4: Blood processing times per Resource Site

Going forward, any specimens that have a processing time of 4 hours or more will be flagged as having failed quality control, but will not be destroyed. Since processing times are recorded on all biospecimens collected by the LCBRN, the Coordinating Center can easily search for specimens that fall within an investigator's specifications when necessary.

Data Quality Assessment

Data audits continue to be performed yearly by the Network Manager and Data Quality Control Manager. Each Resource Site was issued a null value report that listed any subjects who have clinical data fields that are missing values in the central database. All Sites have since completed data entry in accordance with this request. In addition, a data audit sampled the Baseline form, Pathology and Staging form, Surgical Information form and Follow-up forms from 10 randomly selected LCBRN enrolled patients at each Resource Site. Both tissue and biofluid collection forms from these same 10 patients were also assessed. By comparing paper and digital records, the Data Quality Control Manager was able to review the completeness of data annotation and follow-up conforming to specified time lines. The results of the data audit revealed no significant findings.

Marketing

The LCBRN gave platform presentations at both the biorepository workshop at the 2013 Annual AACR meeting in Washington, DC and at the 2013 Molecular Medicine Triconference in San Francisco, CA. Poster presentations were also given at the AACR meeting and at the 2013 ISBER Annual Meeting in Sydney, Australia. Dr. Meyers, the P.I. at the WUSTL Resource Site, will be distributing LCBRN marketing brochures at the 2013 Alliance for Clinical Trials in Oncology Meeting in November 2013. Since the AACR

meeting is considered to be the major meeting with a target audience most desirable to the LCBRN, the LCBRN hopes to share marketing material and help man a vendor booth for the DOD-CDMRP in the future. A poster presentation will be entered under the lung cancer scientific program since it yielded a high rate of traffic and the dispersal of more than 100 informational brochures over a half day period this year.

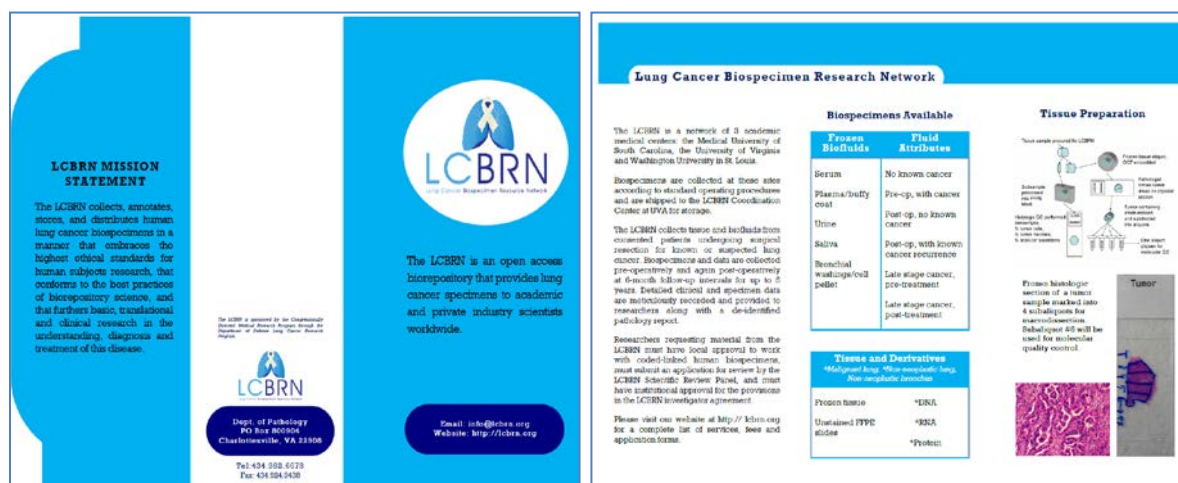


Figure 5. LCBRN Marketing Brochure

In response to the EAB suggestions, the LCBRN embarked on an email campaign to increase its visibility to the research community. Marketing emails have been sent to the Directors of all NCI-designated Cancer Centers, the P.I.s of NCI SPORES in lung cancer, and the P.I.s of the NCI Clinical Proteomic Tumor Analysis Consortium (CPTAC), and to 187 researchers who have applied to the NIH for a lung cancer grant and thus would be likely to utilize LCBRN resources. All marketing emails were sent out in August 2013 and will be repeated annually.

The LCBRN website currently has a link on the LCRP home page and again on their *Funding Opportunities* page. The LCBRN is also linked on the Mid-Atlantic CHTN website, sponsored at the University of Virginia, as an allied biospecimen program at that institution. Another campaign to increase traffic to the LCBRN website is the use of Google Adwords, a website in which Google is paid to place ads for the LCBRN in response to specific search terms. The LCBRN website has received 594 unique visits from ads placed in search of terms related to lung cancer biospecimens since 08/23/2013.

In response to their request seeking applications from tissue and laboratory resources, Dr. Moskaluk, the LCBRN Coordinating P.I., has submitted an application to the NCI for their Assay Development Program. He is proposing that the NCI subcontract the LCBRN for any of their lung cancer biospecimen needs, which will in turn help the LCBRN increase sample distribution while providing researchers with a valuable resource.

Distribution

The Coordinating Center has received 33 inquiries from investigators seeking information about the LCBRN's resources. 6 investigators have submitted applications; 3 were accepted without any changes

and 3 were accepted with modifications. The 3 investigators with applications that were accepted with modifications were given suggestions to make better use of LCBRN resources, or had research that was deemed too risky and were therefore offered a smaller sample set than was originally requested so that they can obtain preliminary results. A summary of the 483 biospecimens that have been shipped in 2013 are outlined in Table 2 below.

Table 2: 2013 LCBRN Sample Distribution

# Frozen tumor tissue aliquots sent	10	# Buffy coat sent	0
# Frozen non-neoplastic tissue aliquots sent	10	# BAL cell pellet	10
# Serum aliquots sent	10	# Nucleic acid aliquots sent	25
# Plasma aliquots sent	10	# Protein aliquots sent	0
# Urine aliquots sent	182	# Unstained slides sent	206
# Saliva aliquots sent	10	Total Amount Invoiced	\$14,464.00
# BAL fluid aliquots sent	10	Total Amount Paid	\$14,464.00

Section III: Key Research Accomplishments

- Exceeded minimum group enrollment goal of 150 subjects enrolled per year
- Creation and deployment of the QC modules of the LCBRN database
- Migration of QC data from excel spreadsheets into LCBRN database
- Addition of H&E digital images for public access on the LCBRN website
- Successful implementation of monthly conference calls and annual Coordinating meetings with minutes recorded and kept on LCBRN Collab online resource
- Shipped biospecimens from all Resource Sites for storage at the LCBRN Coordinating Center
- Perform histologic and molecular quality control at the LCBRN Coordinating Center with regular feedback provided to all Resource Sites
- Implemented several key marketing strategies to improve the LCBRN's visibility in the research community
- Distribution of 483 biospecimens to investigators, all with positive feedback

Section IV: Reportable Outcomes as of 10/18/2013

UVA - Year 3 Metrics

Number of subjects currently enrolled in study: 219

Number of subjects withdrawn from study: 45

Reasons for withdrawal from study: Benign disease (24), Ineligible to continue (16),
 Withdrew consent (5)

Number of subjects withdrawn from follow-up: 22 (deceased)

Percentage of subjects who have tissue collection: 88%

Percentage of subjects who have follow-up specimen collection: 57%

Percentage of subjects who have follow-up data collection: 90%

WUSTL - Year 3 Metrics

Number of subjects currently enrolled in study: 229

Number of subjects withdrawn from study: 22

Reasons for withdrawal from study: Benign disease (13), Ineligible to continue (8), Withdrew consent (1)

Number of subjects withdrawn from follow-up: 33

Percentage of subjects who have tissue collection: 75%

Percentage of subjects who have follow-up specimen collection: 42%

Percentage of subjects who have follow-up data collection: 88%

MUSC – Year 3 Metrics

Number of subjects currently enrolled in study: 164

Number of subjects withdrawn from study: 20

Reasons for withdrawal from study: Benign disease (7), Ineligible to continue (12), Withdrew consent (1)

Number of subjects withdrawn from follow-up: 10 (deceased)

Percentage of subjects who have tissue collection: 85%

Percentage of subjects who have follow-up specimen collection: 47%

Percentage of subjects who have follow-up data collection: 82%

LCBRN Consortium –Year 3 Metrics

Number of subjects currently enrolled in study: 612

Number of subjects withdrawn from study: 87

Percentage of subjects who have tissue collection: 82%

Percentage of subjects with a military history: 20%

Percentage of subjects who have never smoked: 9%

Percentage of subjects who are Caucasian: 90%

Percentage of subjects who are male: 54%

Mean age of subjects: 65 years

Number of applications received: 6

Number of applications approved: 6

Number of samples distributed: 483

Total amount invoiced: \$14,464.00

Total amount received: \$14,464.00

Section V: Conclusion

The LCBRN has met the majority of organizational metrics laid out in the Statement of Work for Year 3. Whereas the consortium was expected to enroll 450 subjects by the end of year 3, it has instead enrolled 600, easily surpassing its goal of 150 subjects enrolled per year. In addition, the majority of tissue specimens collected thus far by the LCBRN have passed both histology and molecular quality control metrics, with feedback mechanisms in place to achieve improvements where needed.

The LCBRN is successfully reviewing applications for suitability and distributing samples to investigators, all of whom have given positive feedback. Concerns regarding the underutilization of LCBRN resources were addressed with rigorous marketing efforts to increase its visibility in the research community. This campaign was not undertaken until August 2013, but is already helping to improve awareness as depicted by the increased number of inquiries received by the Coordinating Center. Going forward, the LCBRN will remain vigilant in its marketing efforts and is currently trying to find new avenues for reaching commercial companies who may be unaware of this valuable resource.

The outcome of this project will be a bank of high quality and highly annotated tissue and biofluid samples from lung cancer patients that will support research into the molecular basis of this disease, the discovery of diagnostic and prognostic biomarkers and the validation of new biomarker assays. This resource will be available to the general research community, with a panel of experts ensuring the judicious use of this resource by projects with a significant likelihood of creating new knowledge of human lung cancer and new tools for the diagnosis and treatment of this disease.

Section VI: Appendices

Appendix A: Banked Biosample Summary, 10-11-2013

Metric	Follow-up #	MUSC	UVA	WUSTL	TOTAL
# Subj -- frozen cancer tissue collected		137	191	150	478
# Subj -- biofluid only		25	27	67	119
# Subj -- w/o cancer- no follow-up		7	24	13	44
# Subj -- total withdrawals		20	45	22	87
# Aliq -- frozen tumor in bank		368	639	369	1376
# Aliq -- frozen lung in bank		380	687	356	1423
# Aliq -- frozen bronchus in bank		158	242	110	510
# FFPE -- with tumor after QC		99	186	113	398
# FFPE -- non neopl lung		110	206	161	477
# FFPE -- non neopl bronchus		74	154	70	298
# Aliq -- serum (presurg) in bank		1090	1874	1856	4820
# Aliq -- plasma (presurg) in bank		983	1550	1597	4130
# Aliq -- urine (presurg) in bank		1242	1859	1776	4877
# Aliq -- saliva (presurg) in bank		372	613	705	1690
# Aliq -- BAL fluid (presurg) in bank		566	891	1317	2774
# Aliq -- serum (postsurg) in bank	1	459	838	419	1716
# Aliq -- serum (postsurg) in bank	2	186	373	207	766
# Aliq -- serum (postsurg) in bank	3	69	139	175	383
# Aliq -- serum (postsurg) in bank	4	25	60	60	145
# Aliq -- serum (postsurg) in bank	5	0	0	8	8
# Aliq -- plasma (postsurg) in bank	1	367	740	359	1466
# Aliq -- plasma (postsurg) in bank	2	164	326	185	675
# Aliq -- plasma (postsurg) in bank	3	70	112	143	325
# Aliq -- plasma (postsurg) in bank	4	22	43	46	111
# Aliq -- plasma (postsurg) in bank	5	0	0	6	6
# Aliq -- urine (postsurg) in bank	1	483	1016	335	1834
# Aliq -- urine (postsurg) in bank	2	235	444	109	788
# Aliq -- urine (postsurg) in bank	3	103	176	88	367
# Aliq -- urine (postsurg) in bank	4	30	56	62	148
# Aliq -- saliva (postsurg) in bank	1	220	443	287	950
# Aliq -- saliva (postsurg) in bank	2	0	9	8	17
# Aliq -- saliva (postsurg) in bank	3	0	4	0	4

Appendix B: Frozen Tissue Donor Detail Report, 10-11-2013

Subject ID	Tumor Dx	Clinical Stage	Frozen Tumor Collected	NeoAdj. Therapy	Initial Tumor Tissue Weight (g)	Tumor Area	Tumor Cellularity	Tumor Necrosis	# Banked Tumor Aliquots	# Tumor Molecular Aliquots	Initial Normal Tissue Weight (g)	# Banked Normal Aliquots	# Normal Molecular Aliquots	Initial Bronchus Tissue Weight (g)	# Banked Bronchus Aliquots	Smoking Hx	Pack/Yr	Military Service	Military Exposures	Civilian Exposures
S0001	Adenocarcinoma	Stage IIB	Y	N	0.380	70	50	15	2	3	0.210	2	0	0.035	1	No - Quit Smoking	10	None	None	None
S0002	Adenocarcinoma	Stage IIA	Y	N	0.320	70	40	0	2	3	0.570	2	0	0.300	1	Never Smoked		None	None	None
S0003	Adenocarcinoma	Stage IB	Y	N	0.027	100	60	0	1	0	0.084	1	0	0.300	1	No - Quit Smoking	38	AR	Second-hand smoke	Second-hand smoke
S0004	Squamous Cell Carcinoma	Stage IIB	Y	N	1.942	100	75	5	10	7	4.903	9	4	0.300	1	No - Quit Smoking	75	AR	Asbestos, Coal mining, Second-hand smoke	Asbestos, Coal mining, Second-hand smoke
S0004	Squamous Cell Carcinoma	Stage IIB	Y	N	1.942	20	80	5	10	7	4.903	9	4	0.300	1	No - Quit Smoking	75	AR	Asbestos, Coal mining, Second-hand smoke	Asbestos, Coal mining, Second-hand smoke
S0006	Adenocarcinoma	Stage IB	Y	N	0.380	80	40	0	2	3	0.310	2	0			No - Quit Smoking	37	None	None	None
S0007	Squamous Cell Carcinoma	Stage IB	Y	N	0.430	60	50	0	2	2	0.700	3	0	0.530	2	No - Quit Smoking	30	None	None	None
S0008	Adenocarcinoma	Stage IIB	Y	N	0.570	50	50	5	2	3	0.260	2	0	0.070	1	No - Quit Smoking	72	None	None	None
S0010	Adenocarcinoma	Stage IB	Y	N	0.180	40	70	0	1	0	0.210	1	3	0.170	1	Never Smoked		None	None	None
S0011	Adenocarcinoma	Stage	Y	N	0.860	80	50	0	4	3	0.120	1	0	0.170	1	No - Quit Smoking	45	AR	Second-hand smoke	Second-hand smoke
S0012	Adenocarcinoma	Stage IB	Y	N	1.800	50	40	10	3	3	0.120	2	0	0.120	1	Yes - Current Smoker	120	None	None	None
S0013	Adenocarcinoma	Stage IA	Y	N	0.108	50	70	0	1	0	0.532	2	3	0.392	1	Yes - Current Smoker		None	None	None
S0014	Adenocarcinoma	Stage IIB	Y	N	1.560	80	70	20	4	2	0.700	3	0	0.190	1	Yes - Current Smoker		None	None	None
S0015	Adenocarcinoma	Stage IA	Y	N	0.050	100	70	0	1	0	0.670	1	0	0.080	1	No - Quit Smoking	45	None	None	None
S0016	Squamous Cell Carcinoma	Stage IA	N	N							0.673	1	0	0.105	1	Yes - Current Smoker	58	None	None	None
S0017	Squamous Cell Carcinoma	Stage IA	Y	N	0.519	60	70	5	2	3	1.620	2	0	0.250	1	Yes - Current Smoker		AF	Jet fuel, Second-hand smoke	Jet fuel, Second-hand smoke
S0018	Squamous Cell Carcinoma	Stage IA	Y	N	0.056	97	80	0	1	0	0.140	1	3	0.038	1	No - Quit Smoking	58	AF	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
S0019	Adenocarcinoma	Stage IA	Y	N	0.054	100	70	0	1	0	0.058	1	3	0.023	1	Never Smoked		None	None	None

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S0022	Squamous Cell Carcinoma	Stage IA	Y	N	0.499	60	60	15	2	3	0.718	2		0.196	1	No - Quit Smoking	62	AR	Second-hand smoke	Second-hand smoke
S0023	Adenocarcinoma	Stage IA	Y	N	0.022	10	70	0	1	0	0.320	1	3	0.180	1	No - Quit Smoking		None	None	None
S0024	Adenocarcinoma	Stage IB	Y	N	0.138	100	60	0	1	2	0.087	1	0			Yes - Current Smoker	52	MIR	None	None
S0025	Squamous Cell Carcinoma	Stage IIA	N	Y	0.049						0.083	1	0	0.022	1	No - Quit Smoking	50	AR	Second-hand smoke	Second-hand smoke
S0026	Bronchioalveolar Carcinoma	Stage IB	Y	N	0.215	100	50	0	3	3	0.115	2	0	0.103	1	No - Quit Smoking		None	None	None
S0027	Adenocarcinoma	Stage IA	Y	N	0.020	50	10	0	1	0	NA	1	3			No - Quit Smoking	105	AR	Second-hand smoke	Second-hand smoke
S0028	Squamous Cell Carcinoma	Stage IIIB	N	N												No - Quit Smoking	150	AF	Jet fuel, Nuclear weapons, Second-hand smoke	Jet fuel, Nuclear weapons, Second-hand smoke
S0029	Squamous Cell Carcinoma	Stage IIA	Y	N	.06	100	40	0	1	3	.571	2		.043	1	No - Quit Smoking		AR	Second-hand smoke	Second-hand smoke
S0030	Adenocarcinoma	Stage IA	Y	N	.034	1	1	0			.488	1	3	.583	3	No - Quit Smoking	66	None	None	None
S0031	Adenocarcinoma		Y	N	.044	30	4	0	1	0	.062	1	0			No - Quit Smoking	32	None	None	None
S0032	Adenocarcinoma	Stage IA	Y	N	.066	30	20	0	1	0	1.50	2	3	.047	1	No - Quit Smoking	15	None	None	None
S0033	Squamous Cell Carcinoma	Stage IA	Y	N	.318	50	80	0	2	0	.902	2	3	.086	1	No - Quit Smoking		None	None	None
S0035	Adenocarcinoma	Stage IA	Y	Y	1.50	40	70	0	2	0	1.30	2	3	.31	1	No - Quit Smoking	33	None	None	None
S0036	Squamous Cell Carcinoma	Stage IB	Y	N	.016	55	40	0	1	0	.07	1	0			No - Quit Smoking	60	AF	Second-hand smoke	Second-hand smoke
S0037	Squamous Cell Carcinoma	Stage	Y	N	1.2	100	70	50	2	0	.802	2	3	.07	1	No - Quit Smoking		None	None	None
S0038	Adenocarcinoma	Stage IB	Y	N	.877	95	70	10	3	5	2.79	3	4	.277	2	No - Quit Smoking	110	NV	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
S0039	Small Cell Carcinoma	Stage IA	Y	N	.288	100	80	15	2	5	.417	2	4	.098	1	No - Quit Smoking	53	None	None	None
S0040	Squamous Cell Carcinoma	Stage IA	Y	N	.217	90	80	5	1	4	.725	2	4	.115	1	No - Quit Smoking	35	MIR	Second-hand smoke	Second-hand smoke
S0041	Squamous Cell Carcinoma	Stage	Y	N	.443	90	60	10	3	4	.797	3	4	.311	2	Yes - Current Smoker	45	None	None	None

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S0042	Adenocarcinoma	Stage IB	Y	N	.990	80	70	5	3	3	2.39	4		.15	1	No - Quit Smoking	45	None	None	None
S0043	Adenocarcinoma	Stage IIA	Y	N	.181	80	70	0	1	4	.22	1	4			Yes - Current Smoker	40	None	None	None
S0045	Adenocarcinoma	Stage	Y	N	.15				1	0	.162	1	0	.11	1	No - Quit Smoking	30	None	None	None
S0046	Adenocarcinoma	Stage IB	Y	N	.182				1	4	1.26	1	4	.20	1	Yes - Current Smoker	25	None	None	None
S0047	Squamous Cell Carcinoma	Stage IA	N	N	.26						.078	1	0	.115	1	No - Quit Smoking	15	None	None	None
S0050	Squamous Cell Carcinoma	Stage IIB	Y	N	.580	60	80	10	3	4	.09		4	.182	2	Yes - Current Smoker	75	None	None	None
S0052	Squamous Cell Carcinoma	Stage IA	Y	N	.085	100	90	0	1	0	.107	1	0			Yes - Current Smoker		None	None	None
S0053	Adenocarcinoma	Stage IA	Y	N	.068	40	10	50	1	0	.495	1	0	.333	2	No - Quit Smoking	45	None	None	None
S0054	Carcinoid Tumor: Typical	Stage IB	Y	N	.143	100	99	0	1	4	.128	1	4	.23	1	No - Quit Smoking	10	None	None	None
S0055	Adenocarcinoma: Mucinous Features	Stage IIB	Y	N	.390	90	60	0	3	4	.398	3	4	.360	2	No - Quit Smoking	20	AF	Jet fuel, Second-hand smoke	Jet fuel, Second-hand smoke
S0056	Squamous Cell Carcinoma	Stage	Y	N	.436	90	80	15	2	4	.312	2	4	.118	1	No - Quit Smoking	23	None	None	None
S0057	Adenocarcinoma: BAC features	Stage IA	N	N						4	.321	2	4	.16	1	Yes - Current Smoker	19	None	None	None
S0058	Adenocarcinoma	Stage	N	N	.50					4	.543	2	4	.366	2	Yes - Current Smoker	4	None	None	None
S0061	Adenocarcinoma: BAC features	Stage IIA	N	N						4	.234	1	4	.088	1	No - Quit Smoking	15	None	None	None
S0062	Adenocarcinoma: BAC features	Stage IA	Y	N	.354	85	75	0	1	4	.145	1	4	.14	1	No - Quit Smoking	30	None	None	None
S0063	Small Cell Carcinoma	Stage IA	Y	N	NA	100	90	5	2	5	NA	2	4			No - Quit Smoking	60	None	None	None
S0066	Undifferentiated Carcinoma: Large Cell	Stage IA	Y	N	.01				1	0	.01	1	0			No - Quit Smoking	49	None	None	None
S0067	Undifferentiated Carcinoma: Large Cell	Stage	Y	N	.254	90	90	70	1	8	.354	1	8	.105	1	No - Quit Smoking	20	None	None	None

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S0068	Adenocarcinoma	Stage IB	N	N	.065				0	8	.643	2	8	.133	1	No - Quit Smoking	165	AR	Second-hand smoke	Second-hand smoke
S0070	Squamous Cell Carcinoma	Stage IIB	Y	N	2.161	100	40	10	2	8	1.098	4	8	.581	2	No - Quit Smoking	55	None	Second-hand smoke	Second-hand smoke
S0071	Adenocarcinoma	Stage IA	Y	N	.138	100	70	0	1	4	.231	1	4	.089	1	No - Quit Smoking	30	None	None	None
S0073	Squamous Cell Carcinoma	Stage IIA	N	N	.100				0	8	.166	0	8	.206	1	Yes - Current Smoker	64	None	None	None
S0074	Adenocarcinoma	Stage IA	N	N	.201				0	8	.298	2	8	.22	1	No - Quit Smoking	60	None	None	None
S0077	Squamous Cell Carcinoma	Stage IB	Y	N	.136	100	80	5	1	8	.189	1	8	.302	2	No - Quit Smoking	40	None	None	None
S0078	Adenocarcinoma	Stage	Y	N	.611	100	70	0	3	8	.990	3	8	.12	1	No - Quit Smoking	20	None	None	None
S0080	Adenocarcinoma	Stage IA	Y	N	.074	70	50	10	1	0	.21	1	0	.078	1	Never Smoked		None	None	None
S0082	Adenocarcinoma: BAC features	Stage IB	Y	N	.297	100	70	0	1	8	.198	1	8	.08	1	No - Quit Smoking	12	None	None	None
S0083	Adenocarcinoma: BAC features	Stage IA	Y	N	.185	100	70	0	2	8	.126	1	8	.087	1	No - Quit Smoking	80	NV	Second-hand smoke	Second-hand smoke
S0085	Adenocarcinoma: BAC features	Stage IA	Y	N	.282	90	70	0	2	8	.783	2	8	.129	1	Yes - Current Smoker	40	None	None	None
S0088	Undifferentiated Carcinoma: Large Cell	Stage IB	Y	N	.895	100	50	5	4	8	.512	4	8	.285	2	Yes - Current Smoker		None	None	None
S0090	Squamous Cell Carcinoma	Stage IB	Y	N	1.308	100	50	20	3	8	.450	4	8	.155	2	No - Quit Smoking	21	AR	Second-hand smoke	Second-hand smoke
S0091	Squamous Cell Carcinoma	Stage IIB	N	N	.149				1	8	.132	1	8	.092	1	No - Quit Smoking	50	AR	Agent Orange, Nuclear weapons, Second-hand smoke	Agent Orange, Nuclear weapons, Second-hand smoke
S0092	Squamous Cell Carcinoma	Stage IIB	Y	N	.20	40	20	0	1	0	.410	3	0	.008	1	No - Quit Smoking	30	None	None	None
S0093	Adenocarcinoma	Stage IIB	Y	N	.820	90	60	10	5	4	.319	2	4	.135	1	Yes - Current Smoker	8	None	None	None
S0095	Adenocarcinoma	Stage	Y	N	2.615	100	40	10	4	0	4.309	4	0	.884	3	No - Quit Smoking	34	None	None	None
S0100	Squamous Cell Carcinoma	Stage IB	Y	N	.048	50	30	10	1	0	.087	1	0			Never Smoked		None	None	None
S0105	Adenosquamous Carcinoma	Stage	Y	N	.637	100	80	15	3	4	.739	3	4	.09	1	No - Quit Smoking	71	None	None	None

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S0107	Adenocarcinoma: BAC features	Stage IIB	Y	N	4.747	80	60	0	15	4	6.678	15	4			Yes - Current Smoker	40	None	None	None
S0108	Squamous Cell Carcinoma	Stage	Y	N	11.59	40	40	15	10	4	12.20	10	4	.25	1	No - Quit Smoking	63	None	None	None
S0109	Adenocarcinoma	Stage	Y	N	.659	90	30	0	3	4	1.750	3	4	.21	1	No - Quit Smoking	2	None	None	None
S0110	Adenocarcinoma		Y	N	.485	75	70	0	2	4	.494	2	4			Yes - Current Smoker	60	None	None	None
S0112	Squamous Cell Carcinoma	Stage IIA	Y	N	3.465	80	70	30	4	4	2.172	7	4	.411	2			None		
S0115	Adenocarcinoma: BAC features	Stage IA	Y	N	.350	95	70	0			.870					No - Quit Smoking	20	None	None	None
S0117	Small Cell Carcinoma	Stage IA	Y	N	.093	95	80	10	1	8	1.916	2	9	.250	2	Yes - Current Smoker	50	None	None	None
S0119	Adenocarcinoma	Stage IV	Y	N	.330	90	60	0			.356			.322		No - Quit Smoking	12	None	None	None
S0122	Small Cell Carcinoma	Stage IA	Y	N	.181	40	90	0			.192			.192		No - Quit Smoking	8	None	None	None
S0124	Adenocarcinoma	Stage IB	Y	N	1.099	100	90	5			0.732			0.334		Yes - Current Smoker	80	None	None	None
S0125	Adenocarcinoma	Stage IA	Y	N	0.120	100	90	0			0.150			0.228		Yes - Current Smoker	27	None	None	None
S0126	Adenocarcinoma	Stage IIA	Y	N	1.462	85	90	0			0.521			0.226		Yes - Current Smoker	8	None	None	None
S0127	Squamous Cell Carcinoma	Stage IA	Y	N	0.151	90	85	0			12.513			0.357		No - Quit Smoking	38	None	Second-hand smoke	Second-hand smoke
S0128	Adenocarcinoma	Stage	N	N	0.307						4.708	1				No - Quit Smoking	94	NV	Second-hand smoke	Second-hand smoke
S0129	Squamous Cell Carcinoma		Y	N	4.618	100	98	10			1.777			1.010		No - Quit Smoking	28	NV	Second-hand smoke	Second-hand smoke
S0130	Squamous Cell Carcinoma	Stage IB	Y	N	2.278	100	50	10			1.734			.483		Yes - Current Smoker	6	None	None	None
S0131	Adenocarcinoma	Stage IV	Y	N	0.210	70	60	0			0.580			0.156		No - Quit Smoking	48	None	None	None
S0134	Adenocarcinoma	Stage IA	Y	N	0.246	40	30	0			0.400			0.172		Never Smoked		None	None	None

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S0135	Squamous Cell Carcinoma	Stage IIA	Y	N	0.302	90	80	0			1.936			0.363		Yes - Current Smoker	22	None	None	None
S0136	Adenocarcinoma: Mucinous Features	Stage IA	Y	N	0.334	95	90	0			0.305			0.055		No - Quit Smoking	40	None	None	None
S0137	Squamous Cell Carcinoma	Stage IB	Y	N	0.210	95	70	5			0.157			0.278		Yes - Current Smoker	80	None	None	None
S0138	Undifferentiated Carcinoma: Large Cell	Stage IB	N	N	1.054											Yes - Current Smoker	13	None	None	None
S0142	Adenosquamous Carcinoma	Stage IA	N	N	0.206						0.848			0.284		No - Quit Smoking	29	None	None	None
S0143	Squamous Cell Carcinoma	Stage	Y	N	1.860	85	80	0			1.340			0.349		Yes - Current Smoker	16	None	None	None
S0144	Squamous Cell Carcinoma	Stage IB	Y	N	0.640	100	75	10			0.581					Yes - Current Smoker	25	None	None	None
S0145	Carcinoid Tumor: Typical	Stage IA	Y	N	0.011	100	100	0			0.141					No - Quit Smoking	20	None	None	None
S0146	Adenocarcinoma	Stage	Y	N	0.587	100	75	5			2.696			0.266		Yes - Current Smoker	16	None		
S0148	Adenocarcinoma	Stage IA	Y	Y	0.039	25	30	0			0.065			0.039		Never Smoked		None	None	None
S0150	Adenocarcinoma	Stage IA	Y	N	0.127	10	70	0			0.107					No - Quit Smoking	14	None	None	None
S0153	Adenocarcinoma	Stage IIA	Y	N	0.561	100	70	0			0.604			0.322		No - Quit Smoking	0	None	None	None
S0154	Adenocarcinoma	Stage IA	Y	N	0.201	45	95	0			0.192					No - Quit Smoking	8	None	None	None
S0155	Carcinoid Tumor: Typical	Stage IA	Y	N	0.274	85	95	0			0.389			0.259		No - Quit Smoking	1	None	None	None
S0156	Squamous Cell Carcinoma	Stage IIB	Y	N	1.296	85	90	0			1.189			1.170		No - Quit Smoking	30	None	Agent Orange, Asbestos, Second-hand smoke	Agent Orange, Asbestos, Second-hand smoke
S0159	Squamous Cell Carcinoma	Stage IIB	Y	N	0.383	100	60	20			0.830			0.299		Yes - Current Smoker	40	None	None	None
S0160	Squamous Cell Carcinoma	Stage IIA	Y	N	1.974	80	25	0			0.758			0.680		Yes - Current Smoker	48	NV	None	None
S0167	Carcinoid Tumor: Atypical		Y	N	0.759	90	95	0								Never Smoked		None	None	None
S0168	Squamous Cell Carcinoma		Y	N	6.561	90	40	0			2.411			0.557				None	None	None

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S0170	Squamous Cell Carcinoma	Stage IA	Y	N	.019	100	30	0			.086					No - Quit Smoking	84	None	Asbestos, Jet fuel, Nuclear weapons, Nuclear-powered engines, Second-hand smoke	Asbestos, Jet fuel, Nuclear weapons, Nuclear-powered engines, Second-hand smoke
V0001	Squamous Cell Carcinoma	Stage IB	Y	N	0.590	100	60	20	2	7	0.890	2	4	0.760	2	Yes - Current Smoker	75	None	None	None
V0002	Adenocarcinoma	Stage IIA	Y	N	0.530	100	70	2	4	8	0.400	3	4	0.370	2	No - Quit Smoking	70	AF	Jet fuel, Second-hand smoke	Jet fuel, Second-hand smoke
V0004	Adenocarcinoma	Stage	Y	N	0.470	20	70	0	1	3	1.570	1	0	0.310	1	Never Smoked		AR	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
V0006	Neuroendocrine Carcinoma: Large Cell	Stage IB	Y	N	2.560	100	80	25	6	7	0.670	4	4	0.370	1	No - Quit Smoking	30	NV	Agent Orange, Asbestos, Nuclear weapons, Second-hand smoke	Agent Orange, Asbestos, Nuclear weapons, Second-hand smoke
V0007	Adenocarcinoma	Stage IV	Y	Y	0.220				0	7	0.200	1	0			No - Quit Smoking	60	None	None	None
V0009	Bronchioalveolar Carcinoma	Stage IA	Y	N	1.350	70	50	0	5	8	0.800	3	4	0.430	1	Never Smoked		AF	Agent Orange, Jet fuel, Second-hand smoke	Agent Orange, Jet fuel, Second-hand smoke
V0010	Squamous Cell Carcinoma	Stage IIA	Y	N	0.640	95	70	5	3	8	1.060	3	4	0.230	1	Yes - Current Smoker	60	None	None	None
V0011	Squamous Cell Carcinoma	Stage IB	Y	N	0.490	60	40	20	0	7	0.200	1	4			No - Quit Smoking	35	None	None	None
V0012	Squamous Cell Carcinoma	Stage IB	Y	N	0.790	20	40	40	0	8	0.520	1	4	0.740	1	No - Quit Smoking	80	AR	Agent Orange, Asbestos, Jet fuel, Second-hand smoke	Agent Orange, Asbestos, Jet fuel, Second-hand smoke
V0013	Adenosquamous Carcinoma	Stage	Y	Y	0.640	70	75	5	2	7	0.680	3	4	0.220	1	Yes - Current Smoker	66	None	None	None
V0014	Squamous Cell Carcinoma		Y	N	0.430	100	80	15	2	6	0.670	2	4			Yes - Current Smoker	60	None	None	None
V0015	Adenocarcinoma	Stage IA	Y	N	0.240	60	70	0	2	6	0.220	1	4	0.260	2	No - Quit Smoking	40	AR	Agent Orange, Second-hand smoke	Agent Orange, Second-hand smoke
V0017	Adenocarcinoma	Stage IB	Y	N	0.880	50	70	5	3	2	0.390	3	0	0.270	2	Never Smoked		AR	Burn pits, Nuclear weapons, Nuclear-powered engines, Second-hand smoke	Burn pits, Nuclear weapons, Nuclear-powered engines, Second-hand smoke
V0020	Squamous Cell Carcinoma	Stage	Y	N	0.740	70	80	5	4	3	2.350	4	0	0.190	2	No - Quit Smoking	30	None	None	None
V0021	Squamous Cell Carcinoma	Stage IA	Y	N	0.140	40	70	5	1	3	0.420	1	0	0.180	1	Yes - Current Smoker	102	None	None	None
V0022	Adenosquamous Carcinoma	Stage IA	N	N												No - Quit Smoking		None	None	None
V0023	Adenocarcinoma	Stage IB	Y	N	0.440	60	60	0	1	3	0.138	1	0	0.139	1	No - Quit Smoking	45	None	None	None

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V0024	Adenocarcinoma	Stage IIB	Y	N	0.760	100	90	50	1	3	0.740	2	0	0.200	1	Yes - Current Smoker	114	None	None	None
V0025	Adenocarcinoma	Stage IA	Y	N	0.357	60	60	5	3	3	1.480	3	0	0.150	2	No - Quit Smoking	66	AR	Agent Orange, Second-hand smoke	Agent Orange, Second-hand smoke
V0026	Adenocarcinoma	Stage IA	Y	N	0.220	85	60	0	1	3	0.730	1	0	0.670	1	No - Quit Smoking	98	NV	Asbestos, Jet fuel, Nuclear weapons, Nuclear-powered engines, Second-hand smoke	Asbestos, Jet fuel, Nuclear weapons, Nuclear-powered engines, Second-hand smoke
V0027	Adenocarcinoma	Stage IIA	Y	N	0.750	70	80	2	3	3	0.630	3	0	0.160	1	No - Quit Smoking	52	None	None	None
V0029	Squamous Cell Carcinoma	Stage IIB	Y	N	0.600	90	70	0	4	3	0.330	2	0			No - Quit Smoking	10	None	None	None
V0031	Squamous Cell Carcinoma	Stage IIA	Y	N	0.820	85	80	40	3	2	1.120	3	0	0.117	1	No - Quit Smoking	40	None	None	None
V0035	Squamous Cell Carcinoma	Stage IIB	Y	N	0.770	30	60	50	2	3	0.710	2	0	0.530	1	No - Quit Smoking	30	None	None	None
V0037	Adenocarcinoma	Stage	N	Y	0.320						0.464	1	0	0.330	1	No - Quit Smoking		None	None	None
V0039	Adenocarcinoma	Stage	Y	N	0.610	70	70	10	4	3	0.690	4	0	0.480	2	No - Quit Smoking	60	AR	None	None
V0040	Squamous Cell Carcinoma	Stage IA	N	N	0.170						1.010	1	0	0.145	1	Yes - Current Smoker		None	None	None
V0041	Adenocarcinoma	Stage IIB	Y	N	0.400	60	50	0	2	3	0.570	2	0	0.075	1	Yes - Current Smoker		None	None	None
V0042	Adenocarcinoma	Stage IA	Y	N	0.300	85	70	0	1	3	0.250	1	0	0.081	1	No - Quit Smoking	112	None	None	None
V0043	Adenocarcinoma	Stage IA	Y	N	0.200	30	40	0	1	0	1.370	2	6			No - Quit Smoking	76	None	None	None
V0044	Adenocarcinoma	Stage	Y	Y	0.600	30	40	0	1	3	0.330	1	0	0.128	1	No - Quit Smoking		None	None	None
V0045	Adenocarcinoma	Stage	Y	N	0.210	25	20	0	1	0	2.800	3	3	0.450	2	Yes - Current Smoker		None	None	None
V0050	Carcinoid Tumor: Typical	Stage IA	Y	N	0.150	90	99	0	2	3	0.420	3	0	0.150	1	No - Quit Smoking		AR	Asbestos, Jet fuel, Second-hand smoke	Asbestos, Jet fuel, Second-hand smoke
V0055	Squamous Cell Carcinoma	Stage IB	Y	N	.86	100	75	5	4	3	1.12	4	0	.466	1	No - Quit Smoking	111	AR	Asbestos, Nuclear weapons, Second-hand smoke	Asbestos, Nuclear weapons, Second-hand smoke
V0056	Squamous Cell Carcinoma	Stage IIA	Y	N	.67	90	80	10	6	3	1.81	6	0	.072	1	No - Quit Smoking	100	None	None	None

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V0057	Adenocarcinoma	Stage IA	Y	N	.46	40	70	5	1	3	1.19	2	0	.316	1	No - Quit Smoking		AF	Agent Orange, Depleted Uranium, Jet fuel, Nuclear weapons, Second-hand smoke	Agent Orange, Depleted Uranium, Jet fuel, Nuclear weapons, Second-hand smoke
V0058	Squamous Cell Carcinoma	Stage IB	Y	N	.79	40	60	15	3	3	.59	3	0	.33	1	Yes - Current Smoker	22	None	None	None
V0059	Squamous Cell Carcinoma		Y	N	.28	70	15	0	1	0	.28	1	3			No - Quit Smoking	20	None	None	None
V0061	Squamous Cell Carcinoma	Stage IA	Y	N	0.54	40	30	10	2	3	0.97	3		0.29	2	No - Quit Smoking	45	None	None	None
V0064	Squamous Cell Carcinoma	Stage IB	Y	N	0.68	30	80	5	2	3	0.57	2	0	.08	1	Yes - Current Smoker	35	AR	Burn pits, Second-hand smoke	Burn pits, Second-hand smoke
V0065	Adenocarcinoma	Stage IB	Y	N	0.61	60	20	0	3	3	0.82	3	0	.053	1	No - Quit Smoking	40	None	None	None
V0066	Adenocarcinoma	Stage IIA	Y	N	0.66	100	40	0	4	3	1.09	4	0	0.23	1	No - Quit Smoking		INV	Asbestos	Asbestos
V0069	Carcinoid Tumor: Atypical	Stage IB	Y	N	.18	80	80	0	2	3	.98	2	0	.06	1	Never Smoked		None	None	None
V0070	Squamous Cell Carcinoma	Stage IB	Y	N	0.71	100	70	40	4	3	0.92	4	0	0.39	1	Yes - Current Smoker		None	None	None
V0071	Adenocarcinoma	Stage IIB	Y	N	.81	70	70	5	2	3	1.08	2	0	.12	1	No - Quit Smoking	75	None	None	None
V0072	Adenocarcinoma	Stage	Y	N	.88	90	80	0	7	3	.90	7	0	.19	2	Yes - Current Smoker	62	None	None	None
V0076	Bronchioalveolar Carcinoma	Stage IA	Y	N	1.66	30	80	0	4	3	2.29	4	0	.85	2	No - Quit Smoking		None	None	None
V0077	Squamous Cell Carcinoma	Stage IIB	Y	N	1.24	60	50	30	3	5	1.55	3	4	.59	2	No - Quit Smoking	100	None	None	None
V0078	Adenoid Cystic Carcinoma	Stage IIB	Y	N	.80	80	95	0	3	5	.26	1	4	.08		No - Quit Smoking	4	None	None	None
V0079	Adenocarcinoma	Stage	Y	N	.63	50	40	0	3	8	1.69	3	8	.54	2	Never Smoked		None	None	None
V0080	Adenocarcinoma	Stage IIA	Y	N	.88	90	90	40	3	5	1.17	3	4	.54	2	Yes - Current Smoker		None	None	None
V0081	Carcinoid: Typical	Stage IIA	Y	N	.09	90	80	0	1	4	.64	1	4	.18	1	No - Quit Smoking	54	NV	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
V0083	Squamous Cell Carcinoma	Stage IA	Y	N	.50	25	70	5	0	4	.39	1	4			No - Quit Smoking		None	None	None
V0088	Squamous Cell Carcinoma	Stage IIB	Y	N	1.16	90	70	20	4	4	1.88	4	4	.27	2	No - Quit Smoking	50	MR	Depleted Uranium, Nuclear weapons, Second-hand smoke	Depleted Uranium, Nuclear weapons, Second-hand smoke

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V0089	Adenocarcinoma	Stage IIB	Y	N	.80	90	50	30	3	4	.30	3	4			No - Quit Smoking	43	None	None	None
V0090	Adenocarcinoma	Stage IB	Y	N	1.12	50	70	0	2	4	.73	3	4	.79	2	No - Quit Smoking	60	None	None	None
V0091	Adenocarcinoma	Stage	Y	N	.57	30	15	0	1	0	.85	3	8	.19	2	Never Smoked		None	None	None
V0093	Squamous Cell Carcinoma	Stage IA	Y	N	1.60	90	90	10	7	4	1.40	7	4	.136	1	Yes - Current Smoker	45	None	None	None
V0094	Bronchioalveolar Carcinoma	Stage IIB	Y	N	.17	75	80	0	1	4	.21	1	4	.16	1	No - Quit Smoking	45	MR	Burn pits, Second-hand smoke	Burn pits, Second-hand smoke
V0095	Undifferentiated Carcinoma: Large Cell	Stage IA	Y	N	.47	85	70	5	2	5	1.68	2	4	.11	1	No - Quit Smoking	50	None	Asbestos	Asbestos
V0096	Squamous Cell Carcinoma	Stage IIA	Y	N	.29	100	60	20	2	4	.89	3	4	.44	2	Yes - Current Smoker	88	NV	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
V0097	Squamous Cell Carcinoma	Stage IB	Y	N	1.8	80	75	25	6	4	1.71	6	4	.38	2	No - Quit Smoking	60	None	None	None
V0098	Squamous Cell Carcinoma	Stage IB	Y	N	.80	60	50	25	3	2	1.84	3	4	.17	1	Yes - Current Smoker	52	None	None	None
V0099	Carcinoid Tumor: Typical	Stage IA	Y	N	.14	90	90	0	1	8	.85	4	8	.08	1	Yes - Current Smoker	69	None	None	None
V0100	Adenocarcinoma	Stage	Y	N	.40	70	70	10	2	4	1.20	2	4	.46	1	Never Smoked		None	None	None
V0101	Squamous Cell Carcinoma	Stage IA	Y	N	.57	50	50	0	1	4	.37	1	4			No - Quit Smoking	50	None	None	None
V0103	Adenosquamous Carcinoma	Stage IA	N	N	.07					4	.28	1	4			No - Quit Smoking	60	NV	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
V0105	Adenocarcinoma	Stage IA	Y	N	.27	100	80	0	1	4	.38	1	4	.30	2	Never Smoked		None	None	None
V0106	Adenocarcinoma	Stage IB	N	N	.76	20	60	0	0	8	.32	1	8			No - Quit Smoking	30	None	None	None
V0107	Carcinoid Tumor: Typical	Stage IB	Y	N	.21	100	70	0	1	4	.81	1	4	.37	1	No - Quit Smoking	25	None	None	None
V0108	Adenosquamous Carcinoma	Stage	Y	N	1.27	100	80	0	6	8	.89	5	8	.058	1	No - Quit Smoking	2	None	None	None
V0110	Mucinous Cystic Neoplasm	Stage IA	Y	N	.92	70	30	0	3	8	1.93	3	8			Never Smoked		None	None	None
V0111	Adenocarcinoma	Stage IB	Y	N	.44	85	50	0	2	8	.47	2	8	.20	2	No - Quit Smoking	60	None	None	None
V0112	Adenocarcinoma	Stage IA	Y	Y	.18	70	50	0	1	8	.58	2	8	.62	3	Yes - Current Smoker	4	None	None	None

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V0113	Carcinoid Tumor: Typical	Stage IA	Y	N	.24	50	85	0	2	0	.48	3	8			No - Quit Smoking	2	None	None	None
V0114	Squamous Cell Carcinoma	Stage	Y	N	1.39	90	70	15	5	8	.89	5	8	.30	1	No - Quit Smoking	40	None	None	None
V0115	Adenosquamous Carcinoma	Stage IA	Y	N	.56	90	85	0	3	8	.26	2	8			No - Quit Smoking	50	AR	Burn pits, Second-hand smoke	Burn pits, Second-hand smoke
V0116	Adenocarcinoma	Stage IIA	Y	N	.85	60	60	5	3	8	1.58	4	8	.54	1	No - Quit Smoking	70	None	None	None
V0117	Carcinoid Tumor: Typical	Stage IB	Y	N	1.56	100	95	0	4	9	1.73	4	8	1.07	3	No - Quit Smoking	15	NV	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
V0118	Squamous Cell Carcinoma	Stage	Y	N	3.86	100	40	5	7	8	3.85	8	8	.26		Yes - Current Smoker	104	None	None	None
V0119	Adenocarcinoma	Stage IIA	Y	N	1.01	80	70	0	6	8	1.09	7	8	.20	2	No - Quit Smoking	30	MR	Second-hand smoke, Toxic waste sites	Second-hand smoke, Toxic waste sites
V0120	Adenocarcinoma	Stage IV	Y	Y	1.27	50	80	50	3	8	.79	4	8	.41	2	Yes - Current Smoker	40	None	None	None
V0121	Adenocarcinoma	Stage IIA	Y	N	1.00	80	60	0	7	8	2.25	8	8	.27	1	No - Quit Smoking	80	AF	Asbestos, Jet fuel, Second-hand smoke	Asbestos, Jet fuel, Second-hand smoke
V0121	Adenocarcinoma	Stage IIA	Y	N	1.00	90	60	5	7	8	2.25	8	8	.27	1	No - Quit Smoking	80	AF	Asbestos, Jet fuel, Second-hand smoke	Asbestos, Jet fuel, Second-hand smoke
V0124	Adenocarcinoma	Stage	Y	N	1.19	90	60	5	3	8	1.39	3	8	.18	1	No - Quit Smoking	15	None	None	None
V0125	Adenocarcinoma	Stage IA	Y	N	.15	60	50	0	1	8	1.11	3	8	.38	1	No - Quit Smoking	42	None	None	None
V0126	Adenocarcinoma	Stage IA	Y	N	.49	15	60	0	1	8	1.80	2	9	.45	1	Yes - Current Smoker	50	None	None	None
V0128	Adenocarcinoma	Stage IA	Y	N	.77	10	50	0	0	8	1.04	3	8	.05	1	No - Quit Smoking	40	None	None	None
V0130	Adenocarcinoma	Stage IIB	Y	N	.89	60	60	0	2	8	.80	3	8	.40	1	No - Quit Smoking	15	None	None	None
V0131	Adenocarcinoma: BAC features	Stage IB	Y	N	.70	40	40	0	3	4	1.04	3	4	.39	2	Yes - Current Smoker	75	AR	Second-hand smoke	Second-hand smoke
V0132	Adenocarcinoma	Stage IA	Y	N	.36	90	70	0	1	4	.91	4	4	.16	1	No - Quit Smoking	15	None	None	None
V0133	Adenosquamous Carcinoma	Stage IA	Y	N	.12	100	95	5	1	0	.40	1	0			Yes - Current Smoker	75	None	None	None

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V0135	Squamous Cell Carcinoma	Stage IB	Y	N	1.42	90	70	10	5	4	1.40	6	4	1.52	3	No - Quit Smoking	64	AR	Asbestos, Jet fuel, Second-hand smoke	Asbestos, Jet fuel, Second-hand smoke
V0138	Adenosquamous Carcinoma	Stage IIA	Y	N	.98	25	80	5	2	4	1.43	4	4	.35	2	No - Quit Smoking	22	None	None	None
V0139	Adenosquamous Carcinoma	Stage	Y	N	.314	1	80	0	1	0	1.94	3	0	.125	1	No - Quit Smoking	1	None	None	None
V0141	Adenocarcinoma	Stage IIA	Y	N	1.32	50	50	0	3	4	.73	3	4	.67	2	No - Quit Smoking	40	None	None	None
V0142	Adenocarcinoma: BAC features	Stage IIB	Y	N	1.73	100	70	0	5	4	1.49	5	4	.20	1	No - Quit Smoking	50	AR	Agent Orange, Burn pits, Jet fuel, Second-hand smoke	Agent Orange, Burn pits, Jet fuel, Second-hand smoke
V0144	Squamous Cell Carcinoma	Stage IA	Y	N	.055	60	70	0	1	0	.28	1	0			No - Quit Smoking	25	None	None	None
V0145	Adenocarcinoma: BAC features	Stage IA	Y	N	.36	1	40	0	1	0	.25	1	4	.32	1	No - Quit Smoking	60	None	None	None
V0146	Carcinoid Tumor: Typical	Stage IA	Y	N	.47	100	99	0	2	4	.95	3	4	.51	2	No - Quit Smoking	40	None	None	None
V0148	Adenocarcinoma: BAC features	Stage IA	Y	N	.52	50	50	0			.48					Yes - Current Smoker	83	None	None	None
V0148	Adenocarcinoma: BAC features	Stage IA	Y	N	.52	60	60	0			.48					Yes - Current Smoker	83	None	None	None
V0148	Adenocarcinoma: BAC features	Stage IA	Y	N	.52	90	60	0			.48					Yes - Current Smoker	83	None	None	None
V0149	Squamous Cell Carcinoma	Stage IA	Y	N	.22	70	70	25	1		.15					Yes - Current Smoker	30	None	None	None
V0150	Carcinoid Tumor: Typical	Stage IA	Y	N	.18	95	99	0	1		.98	3	4			Yes - Current Smoker	60	None	None	None
V0151	Squamous Cell Carcinoma	Stage IIA	Y	Y	.33	1					1.6	3	4	.28	1	Yes - Current Smoker	90	None	None	None
V0152	Bronchioalveolar Carcinoma	Stage IA	Y	Y	.29	50	60	0	1	4	.75	1	4	.07	1	No - Quit Smoking	15	None	None	None
V0153	Carcinoid Tumor: Typical	Stage IA	Y	N	.018	5	0	0	1	0				.025	1	No - Quit Smoking	18	MR	Second-hand smoke	Second-hand smoke
V0155	Adenocarcinoma	Stage IB	Y	N	.26	60	70	0	1	4	.28	1	4	.20	1	No - Quit Smoking	42	None	None	None
V0156	Adenocarcinoma	Stage IIA	Y	N	1.44	40	90	0	3	4	1.82	3	4	.78	2	No - Quit Smoking	15	AR	Second-hand smoke	Second-hand smoke

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V0158	Adenocarcinoma	Stage IA	Y	N	.15	85	75	0	1	4	.50	1		.07	1	Yes - Current Smoker	120	None	None	None
V0164	Adenocarcinoma	Stage IIA	Y	N	.45	100	85	0	3	4	1.02	3	4			Never Smoked		None	None	None
V0165	Undifferentiated Carcinoma: Large Cell	Stage IB	Y	N	1.29	100	90	33	7	4	1.42	7	4	.21	2	No - Quit Smoking	23	None	None	None
V0166	Squamous Cell Carcinoma	Stage IIA	Y	N	.98	50	80	0	2	4	.98	2	4	.24	2	Yes - Current Smoker	60	None	None	None
V0167	Adenocarcinoma	Stage IA	Y	N	.072	98	70	0	1	0	.75	1	0	.076	1	Yes - Current Smoker	40	None	None	None
V0168	Adenocarcinoma	Stage IA	Y	N	.39	100	85	0	3	4	.43	3	4	.25	2	No - Quit Smoking	40	None	None	None
V0169	Adenocarcinoma	Stage IA	Y	N	.20	75	80	0	1	0	.09	1	0			No - Quit Smoking	53	None	None	None
V0171	Squamous Cell Carcinoma	Stage IIA	Y	N	.62	50	85	5	1	4	1.14	2	4	1.01	2	No - Quit Smoking	45	NV	Agent Orange, Asbestos, Nuclear-powered engines, Second-hand smoke	Agent Orange, Asbestos, Nuclear-powered engines, Second-hand smoke
V0173	Adenocarcinoma	Stage IA	Y	N	.03	100	80	0	1	0	.075	1	0			Yes - Current Smoker	6	None	None	None
V0176	Squamous Cell Carcinoma	Stage IIA	N	N												No - Quit Smoking	104	None	None	None
V0178	Adenocarcinoma	Stage IIA	Y	Y	1.08	100	95	5	6	4	.87	6	4	.196	1	No - Quit Smoking	15	None	None	None
V0179	Adenocarcinoma	Stage IA	Y	N	.73	50	50	0	1	4	1.43	4	4	.08	1	No - Quit Smoking	8	None	None	None
V0180	Bronchioalveolar Carcinoma	Stage IA	Y	N	.085	100	90	0	1	0	1.46	3	0	.29	2	Yes - Current Smoker	55	None	None	None
V0181	Small Cell Carcinoma	Stage IB	Y	N	1.28	100	60	5	7	4	1.51	7	4	.60	1	No - Quit Smoking	75	AR	Second-hand smoke	Second-hand smoke
V0182	Squamous Cell Carcinoma	Stage IIA	Y	N	1.24	100	80	0	8	4	1.96	8	4	.23	2	No - Quit Smoking	100	None	None	None
V0185	Squamous Cell Carcinoma	Stage IA	Y	N	0.24	50	75	20	1	4	1.68	1	4	.25	1	No - Quit Smoking	68	None	None	None
V0189	Carcinoid Tumor: Typical	Stage IA	Y	N	.42	100	98	0	2	4	1.10	2	4	.087	1	Never Smoked		None	Second-hand smoke	Second-hand smoke
V0190	Squamous Cell Carcinoma	Stage IIB	Y	N	.76	90	95	0	3	4	1.08	3	4			No - Quit Smoking	60	AR	Jet fuel, Second-hand smoke	Jet fuel, Second-hand smoke

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V0191	Squamous Cell Carcinoma	Stage IA	Y	N	.13	100	90	30	1	0	.63	2	0	.167	1	Yes - Current Smoker	55	None	None	None
V0194	Adenocarcinoma	Stage IIA	Y	Y	1.71	1	90	85			1.76			.15		No - Quit Smoking	40	None	None	None
V0195	Adenocarcinoma	Stage IB	Y	N	.80	90	80	0			.75			.80		No - Quit Smoking	40	None	None	None
V0197	Squamous Cell Carcinoma	Stage IA	Y	N	.75	100	70	2			1.55			.69		No - Quit Smoking	60	None		
V0198	Adenocarcinoma	Stage IIA	Y	N	.41	95	80	0			1.35			.12		No - Quit Smoking	38	None		
V0201	Adenocarcinoma	Stage	Y	N	.21	45	75	0			.63					No - Quit Smoking	38	None	Jet fuel, Second-hand smoke	Jet fuel, Second-hand smoke
V0203	Adenocarcinoma: BAC features	Stage IA	Y	N	.61	90	85	0			.59			.43		Never Smoked		None	None	None
V0206	Adenocarcinoma	Stage IA	Y	N	.08	90	90	0			.97			.06		No - Quit Smoking	72	None	None	None
V0208	Adenocarcinoma	Stage IA	N	N	.11						1.41			.36		Yes - Current Smoker	80	None	None	None
V0209	Adenocarcinoma	Stage IB	Y	N	1.02	95	85	0			1.34			.047		No - Quit Smoking	11	None	None	None
V0210	Squamous Cell Carcinoma	Stage	Y	N	2.96	100	20	40			3.29			.27		No - Quit Smoking	20	NV	Agent Orange, Asbestos, Jet fuel, Second-hand smoke	Agent Orange, Asbestos, Jet fuel, Second-hand smoke
V0213	Squamous Cell Carcinoma	Stage IB	Y	N	.30	100	98	0			.74			.22		Yes - Current Smoker	40	None	None	None
V0214	Adenocarcinoma	Stage IA	Y	N	.85	15	90	0			1.04			.18		Yes - Current Smoker	34	None	None	None
V0215	Carcinoid Tumor: Typical	Stage IA	Y	N	.39	100	90	0			.23			.21		No - Quit Smoking	8	None	None	None
V0216	Adenocarcinoma	Stage IB	Y	N	.71	90	50	0			.76			.08		Never Smoked		None	None	None
V0218	Adenocarcinoma: BAC features	Stage IA	Y	N	.38	40	80	0			1.20			.19		No - Quit Smoking	35	None	None	None
V0220	Adenocarcinoma	Stage IA	Y	N	1.01	45	80	0			2.25			.27		No - Quit Smoking	60	None	None	None
V0221	Adenocarcinoma: BAC features	Stage IA	Y	N	.99	80	90	0			.95					No - Quit Smoking	60	None	None	None
V0225	Squamous Cell Carcinoma	Stage IA	Y	N	.75	33	70	0			2.97			1.18		No - Quit Smoking	40	None	None	None

Subject ID	Tumor Dx	Clinical Stage	Frozen Tumor Collected	NeoAdj. Therapy	Initial Tumor Tissue Weight (g)	Tumor Area	Tumor Cellularity	Tumor Necrosis	# Banked Tumor Aliquots	# Tumor Molecular Aliquots	Initial Normal Tissue Weight (g)	# Banked Normal Aliquots	# Normal Molecular Aliquots	Initial Bronchus Tissue Weight (g)	# Banked Bronchus Aliquots	Smoking Hx	Pack/Yr	Military Service	Military Exposures	Civilian Exposures
V0226	Undifferentiated Carcinoma: Large Cell	Stage IB	N	N	1.01						.91			.43		No - Quit Smoking	38	None	None	None
V0229	Squamous Cell Carcinoma	Stage IB	Y	N	1.40						.80			.10		No - Quit Smoking	50	NV	Agent Orange, Asbestos, Jet fuel, Second-hand smoke	Agent Orange, Asbestos, Jet fuel, Second-hand smoke
V0232	Squamous Cell Carcinoma	Stage	Y	N	1.80						1.3			.33		Yes - Current Smoker	60	None	None	None
V0233	Squamous Cell Carcinoma	Stage IA	Y	N	.32						.70			.17		Yes - Current Smoker	10	None	None	None
V0247	Adenocarcinoma	Stage	Y	N	.16	100	80	0			.73			.17		No - Quit Smoking	10	None	None	None
V0252	Squamous Cell Carcinoma	Stage IA	Y	N	.83	20	50	10			.49			.15		No - Quit Smoking	30	None	None	None
W0001	Squamous Cell Carcinoma	Stage IB	Y	N	0.980	40	80	5	1	2	1.710	2	0	0.250	1	Yes - Current Smoker		None	None	None
W0002	Bronchioalveolar Carcinoma	Stage IA	Y	N	0.240	80	50	0	2	3	0.370	2	0	0.050	1	No - Quit Smoking	35	None	None	None
W0004	Adenocarcinoma	Stage IB	Y	N	1.250	95	60	10	10	2	0.630	1	0	0.830	2	No - Quit Smoking	45	AR	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
W0007	Adenocarcinoma	Stage IA	Y	N	0.140	60	70	5	2	3	0.530	2	0	0.370	1	Yes - Current Smoker		None	None	None
W0008	Small Cell Carcinoma	Stage	Y	N	0.200	85	90	30	2	7	0.370	1	8	0.090	1	Yes - Current Smoker		None	None	None
W0010	Carcinoid Tumor: Typical	Stage IA	Y	N	0.160	100	95	0	3	3	0.090	3	0	0.030	1	Never Smoked		None	None	None
W0011	Neuroendocrine Carcinoma: Large Cell	Stage IA	Y	N	0.240	90	90	30	2	3	0.220	2	0			Yes - Current Smoker		None	None	None
W0013	Adenocarcinoma	Stage IB	Y	N	0.800	100	70	25	2	0	1.130	2	3	0.360	2	No - Quit Smoking	44	None	None	None
W0014	Squamous Cell Carcinoma	Stage IB	Y	N	0.260	100	80	30	2	2	0.230	2	0			Yes - Current Smoker		None	None	None
W0015	Adenocarcinoma	Stage IA	Y	N	0.060	100	40	0	1	0	0.070	1	0			Yes - Current Smoker		None	None	None
W0016	Adenocarcinoma	Stage IA	Y	N	NA	100	60	0	1	3	0.100	1	0	0.050	1	Never Smoked		None	None	None
W0019	Squamous Cell Carcinoma	Stage	Y	N	0.800	100	60	0	4	3	0.980	4	0	0.630	1	No - Quit Smoking	23	None	None	None

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W0020	Squamous Cell Carcinoma	Stage IIA	Y	N	0.980	80	80	10	4	3	0.710	4	0	0.180	2	No - Quit Smoking	15	None	None	None
W0021	Adenocarcinoma	Stage IA	Y	N	0.190	95	90	0	1	3	0.300	1	0			No - Quit Smoking	60	None	None	None
W0022	Squamous Cell Carcinoma	Stage IA	Y	N	0.230	100	60	20	2	3	0.460	2	0			Yes - Current Smoker		None	None	None
W0023	Squamous Cell Carcinoma	Stage IB	Y	N	0.650	60	50	5	3	3	0.280	3	0			Yes - Current Smoker		None	None	None
W0024	Adenocarcinoma	Stage IIIB	Y	N	0.370	60	70	0	1	3	0.420	1	0			No - Quit Smoking	30	None	None	None
W0025	Adenocarcinoma	Stage IA	Y	N	0.150	90	50	20	1	3	0.100	1	0			No - Quit Smoking	24	None	None	None
W0026	Squamous Cell Carcinoma	Stage	Y	N	0.890	70	70	25	4	3	0.680	4	0	0.250	2	Yes - Current Smoker	36	None	None	None
W0028	Squamous Cell Carcinoma		Y	N	0.110	100	40	50	1	3	0.250	1	0			No - Quit Smoking	90	None	None	None
W0029	Neuroendocrine Carcinoma: Large Cell	Stage IA	Y	N	0.350	100	85	40	2	3	1.240	2	0	0.250	1	No - Quit Smoking		None	None	None
W0030	Adenocarcinoma	Stage IIA	Y	N	NA	100	30	30	4	3	NA	2	0	0.156	1	No - Quit Smoking	35	AF	Asbestos, Jet fuel, Second-hand smoke	Asbestos, Jet fuel, Second-hand smoke
W0032	Adenocarcinoma	Stage IA	Y	N	0.450	100	80	0	1	3	0.145	1	0			No - Quit Smoking	30	None	None	None
W0033	Adenocarcinoma	Stage IB	Y	N	0.760	100	60	0	4	3	1.180	4	0	0.350	2	No - Quit Smoking	81	None	None	None
W0036	Squamous Cell Carcinoma	Stage	Y	N	1.120	60	50	5	2	3	1.300	2	0	0.500	1	Yes - Current Smoker	96	None	None	None
W0038	Adenocarcinoma	Stage IIA	Y	N	0.330	60	50	0	2	3	0.080	1	0			No - Quit Smoking	50	MIR	None	None
W0039	Squamous Cell Carcinoma	Stage IB	Y	N	0.760	100	70	5	4	3	0.590	4	0	0.210	1	No - Quit Smoking	30	None	None	None
W0042	Adenocarcinoma	Stage IIB	Y	N	0.310	60	60	0	1	3	0.120	1	0			No - Quit Smoking		None	None	None
W0043	Adenocarcinoma	Stage	Y	N	0.340	60	40	0	1	3	0.480	2	0	0.150	1	No - Quit Smoking	33	None	None	None
W0044	Adenocarcinoma	Stage IA	Y	N	0.270	60	70	0	1	3	0.170	1	0			Yes - Current Smoker	80	None	None	None

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W0045	Adenocarcinoma	Stage IB	Y	N	0.360	85	50	0	2	3	0.550	2	0	0.100	1	No - Quit Smoking	40	MR	None	None
W0046	Adenocarcinoma	Stage IIB	Y	N	0.960	100	30	0	6	3	0.380	4	0	0.200	1	No - Quit Smoking		None	None	None
W0047	Squamous Cell Carcinoma	Stage IIA	Y	N	1.310	100	60	5	6	3	1.310	6	0	0.230	1	No - Quit Smoking	120	None	None	None
W0051	Adenocarcinoma	Stage IA	Y	N	0.220	90	40	0	2	3	0.400	2	0			Yes - Current Smoker		None	None	None
W0052	Adenocarcinoma	Stage IB	Y	N	0.080	100	50	0	1	0	0.056	1	0			No - Quit Smoking	100	None	None	None
W0053	Squamous Cell Carcinoma	Stage	Y	N	0.290	95	70	5	3	3	0.630	3	0			No - Quit Smoking	50	None	None	None
W0054	Adenocarcinoma	Stage IIA	Y	N	0.026	60	40	5	1	0	0.067	1	0	0.017	1	No - Quit Smoking		None	None	None
W0055	Squamous Cell Carcinoma	Stage IIA	Y	N	.54	100	70	80	4	3	NA	2	0	.077	1	Yes - Current Smoker	40	None	None	None
W0057	Adenocarcinoma	Stage	Y	N	.32	1	2	0	1	0	.32	2	0	.25	2	No - Quit Smoking	50	None	None	None
W0058	Squamous Cell Carcinoma	Stage IV	Y	Y	.22	95	70	15	2	3	.19	2	0	.08	1	Yes - Current Smoker	50	None	None	None
W0060	Adenocarcinoma	Stage IB	Y	N	.25	60	50	0	2	3	.31	2	0	.19	1	Never Smoked		None	None	None
W0062	Adenocarcinoma	Stage	Y	N	.14	90	60	0	1	3	.23	1	0	.11	1	Never Smoked		None	None	None
W0063	Adenocarcinoma	Stage IA	Y	N		90	25	0	2	3	.22	2	0			No - Quit Smoking		None	None	None
W0064	Adenocarcinoma	Stage IA	Y	N	.30	100	30	0	3	3	.09	2	0			No - Quit Smoking	50	AR	Second-hand smoke	Second-hand smoke
W0066	Adenocarcinoma	Stage IIB	Y	N	.36	85	40	15	3	3	.49	3	0	.13	1	No - Quit Smoking		None	None	None
W0067	Bronchioalveolar Carcinoma	Stage IA	Y	N	.14	90	70	0	1	3	.23	1	0	.08	1	No - Quit Smoking	24	None	None	None
W0070	Adenocarcinoma	Stage IIB	Y	N	1.03	95	75	0	2	10	.75	2	8			No - Quit Smoking		AR	None	None
W0071	Squamous Cell Carcinoma	Stage	Y	N	.56	90	50	5	2	8	.57	2	9	.25	2	No - Quit Smoking	50	None	None	None
W0072	Adenocarcinoma	Stage	N	N	.20	90	30	0	0	4	NA	0	5	.21	1	No - Quit Smoking	45	None	None	None
W0074	Squamous Cell Carcinoma	Stage	N	N	1.89	100	25	10	0	2	.92	1	5			No - Quit Smoking	35	AR	Second-hand smoke	Second-hand smoke

Subject ID	Tumor Dx	Clinical Stage	Frozen Tumor Collected	NeoAdj. Therapy	Initial Tumor Tissue Weight (g)	Tumor Area	Tumor Cellularity	Tumor Necrosis	# Banked Tumor Aliquots	# Tumor Molecular Aliquots	Initial Normal Tissue Weight (g)	# Banked Normal Aliquots	# Normal Molecular Aliquots	Initial Bronchus Tissue Weight (g)	# Banked Bronchus Aliquots	Smoking Hx	Pack/Yr	Military Service	Military Exposures	Civilian Exposures
W0076	Adenocarcinoma	Stage IV	Y	N	.32	100	20	0	1	5	.34	1	5			No - Quit Smoking	50	None	None	None
W0079	Squamous Cell Carcinoma	Stage IA	Y	N	.28	70	60	2	0	5	NA	3	4	.15	1	No - Quit Smoking		None	None	None
W0081	Adenocarcinoma	Stage IIA	Y	N	.77	100	70	30	3	4	.58	3	4	.086	1	Yes - Current Smoker	140	NV	Asbestos, Jet fuel, Second-hand smoke	Asbestos, Jet fuel, Second-hand smoke
W0082	Adenocarcinoma	Stage IB	N	N	.18	90	60	2	0	5	.34	0	5			No - Quit Smoking	89	AF	Agent Orange, Asbestos, Jet fuel, Second-hand smoke	Agent Orange, Asbestos, Jet fuel, Second-hand smoke
W0084	Squamous Cell Carcinoma	Stage IA	Y	N	.21	70	70	20	1	4	.22	1	4			No - Quit Smoking	60	AF	Second-hand smoke	Second-hand smoke
W0087	Small Cell Carcinoma	Stage IIB	Y	N	.26	65	85	5	1	5	.84	1	4			No - Quit Smoking	40	None	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
W0089	Squamous Cell Carcinoma	Stage IA	Y	N	.46	20	75	15	2	4	3.07	3	4	.23	1	No - Quit Smoking	40	None	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
W0094	Adenocarcinoma	Stage IA	Y	N	.36	90	70	2	2	4	.21	2	4	NA	2	Yes - Current Smoker		None	None	None
W0095	Adenocarcinoma	Stage IA	N	N							1.35	3	0	.11	1	Yes - Current Smoker		None	Second-hand smoke	Second-hand smoke
W0096	Squamous Cell Carcinoma	Stage IIA	Y	N	.49	90	70	20	4	4	.84	4	4	.21	1	Yes - Current Smoker		None	None	None
W0097	Undifferentiated Carcinoma: Large Cell		Y	N	.57	100	50	10	3	9	1.18	3	8	.32	1	No - Quit Smoking	94	None	None	None
W0098	Adenocarcinoma	Stage IA	Y	N	.26	40	75	2	0	8	2.26	2	8	.256	1	Yes - Current Smoker		AR	Second-hand smoke	Second-hand smoke
W0100	Adenocarcinoma	Stage	Y	N	.25	60	60	2	1	8	1.90	2	8	.335	1	No - Quit Smoking	120	None	None	None
W0102	Adenocarcinoma	Stage	Y	N	1.27	60	60	15	3	8	.75	3	8	.17	1	No - Quit Smoking	20	AR	Second-hand smoke	Second-hand smoke
W0103	Adenocarcinoma	Stage IA	Y	N	.20	60	40	40	1	0	.53	2	8	.138	1	No - Quit Smoking	60	None	None	None
W0105	Bronchioalveolar Carcinoma	Stage IIB	Y	N	1.69	95	80	0	7	9	1.08	4	8	.051	1	No - Quit Smoking	25	None	None	None
W0107	Adenocarcinoma	Stage IB	Y	N	.52	95	60	0	3	8	.44	3	8	.10	1	Never Smoked		None	None	None
W0109	Adenocarcinoma	Stage IIB	Y	N	1.20	100	60	15			.78			.29		No - Quit Smoking	20	None	None	None
W0111	Adenocarcinoma	Stage IA	Y	N	.22	60	70	0			.90					No - Quit Smoking	34	None	None	None

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W0112	Adenocarcinoma	Stage IB	Y	N	.39	90	50	30			1.03			.24		No - Quit Smoking	24	AR	Second-hand smoke	Second-hand smoke
W0113	Adenocarcinoma	Stage	Y	N	.16	70	80	10			.29					No - Quit Smoking	30	None	None	None
W0114	Adenocarcinoma	Stage	Y	N	.39	100	80	10			1.52					No - Quit Smoking	7	AF	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
W0115	Squamous Cell Carcinoma	Stage IA	Y	N	.07	100	85	5			.19					No - Quit Smoking		None	None	None
W0116	Adenocarcinoma	Stage IIA	Y	N	.24	20	40	0			.64			.20		No - Quit Smoking	25	None	None	None
W0119	Adenocarcinoma	Stage IA	Y	N	.29	100	10	0			.75			.15		No - Quit Smoking	60	None	None	None
W0120	Bronchioalveolar Carcinoma	Stage IA	Y	N	.09	25	70	0			.28			.13		Never Smoked		None	None	None
W0122	Undifferentiated Carcinoma: Large Cell	Stage IB	Y	N	.31	100	80	10			.61					Never Smoked		AF	Asbestos, Jet fuel, Second-hand smoke	Asbestos, Jet fuel, Second-hand smoke
W0128	Small Cell Carcinoma	Stage IIA	Y	N	.55	90	70	15	3	9	.52	3	8	.26	2	Yes - Current Smoker	40	NV	Asbestos, Nuclear weapons, Second-hand smoke	Asbestos, Nuclear weapons, Second-hand smoke
W0129	Undifferentiated Carcinoma: Large Cell	Stage IIA	Y	N	.32	100	50	40			.61			.20		No - Quit Smoking	90	None	None	None
W0131	Adenocarcinoma	Stage IIA	Y	N	.15	90	75	0			.15					Yes - Current Smoker	5	AR	Second-hand smoke	Second-hand smoke
W0135	Squamous Cell Carcinoma	Stage IB	Y	N	.30	100	50	20			.16			.04		No - Quit Smoking	125	CG	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
W0139	Squamous Cell Carcinoma	Stage IB	Y	N	.51	50	60	10			.54					No - Quit Smoking	68	None	Asbestos, Second-hand smoke	Asbestos, Second-hand smoke
W0142	Adenocarcinoma	Stage	Y	N	0.78	60	40	10			0.42			.17		Yes - Current Smoker	75	None	None	None
W0144	Adenocarcinoma	Stage	Y	N	.29	90	70	5			.70			.21		Never Smoked		None	None	None
W0145	Squamous Cell Carcinoma	Stage IIA	N	N	.25	100	90	5			.26					No - Quit Smoking	40	None	None	None
W0151	Adenocarcinoma		Y	N	.51	100	30	0			.76			.16		No - Quit Smoking	43	None	None	None
W0152	Adenocarcinoma	Stage	Y	N	1.17	95	90	0			.77			.44		Never Smoked		None	None	None
W0153	Adenocarcinoma	Stage	Y	N	1.18	100	95	5			1.04			.20		No - Quit Smoking	150	AR	Second-hand smoke	Second-hand smoke
W0159	Carcinoid Tumor: Typical	Stage IA	Y	N	.06	100	95	0			.59			.04		Never Smoked		None	None	None

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W0161	Adenocarcinoma	Stage IA	Y	N	0.07	100	50	0			0					Yes - Current Smoker	112	None	None	None
W0162	Adenocarcinoma: Mucinous Features	Stage IA	Y	N	.23	90	80	0			.36					Never Smoked		None	None	None
W0163	Neuroendocrine Carcinoma: Large Cell	Stage	Y	N	.90	100	95	50			1.06			.22		Yes - Current Smoker	75	None	None	None
W0165	Squamous Cell Carcinoma	Stage IIB	Y	N	.39	100	80	0			.29					Yes - Current Smoker		None	None	None
W0166	Sarcomatoid Carcinoma	Stage IB	Y	N	.5	100	95	5			.37					No - Quit Smoking	74	None	Sarin or chemical weapons, Second-hand smoke	Sarin or chemical weapons, Second-hand smoke
W0168	Adenocarcinoma	Stage IA	Y	N	.16	80	75	0			.48					No - Quit Smoking	68	None	None	None
W0173	Squamous Cell Carcinoma	Stage IA	Y	N	.17	100	20	0			.53			.11		Yes - Current Smoker	52	None	None	None
W0177	Carcinoid Tumor: Typical	Stage IA	Y	N	0.07	100	98	0			.20					Never Smoked		None	None	None
W0179	Carcinoid Tumor: Typical	Stage IIB	Y	N	.19	100	100	0			.11					Never Smoked		None	None	None
W0180	Adenocarcinoma	Stage IIIB	Y	N	.12	100	40	5			.20					No - Quit Smoking	40	None	None	None
W0181	Squamous Cell Carcinoma	Stage IA	Y	N	.05	100	70	5			.33					No - Quit Smoking	76	None	None	None
W0182	Squamous Cell Carcinoma		Y	N	.15	90	20	0			.6					No - Quit Smoking	31	None	None	None
W0183	Adenocarcinoma	Stage IIA	Y	N	.12	100	90	0			.20					Never Smoked		None	None	None
W0185	Squamous Cell Carcinoma	Stage	Y	N	.73	50	60	10			1.42			.41		No - Quit Smoking	81	None	None	None
W0187	Squamous Cell Carcinoma	Stage	Y	N	.31	90	85	0			.67			.21		No - Quit Smoking	5	None	None	None
W0189	Squamous Cell Carcinoma	Stage IA	Y	N	.08	100	90	5			.08					No - Quit Smoking	68	AR	Second-hand smoke	Second-hand smoke
W0190	Carcinoid Tumor: Typical	Stage IA	Y	N	.18	85	98	0			.33			.20		Never Smoked		None	None	None
W0194	Adenocarcinoma	Stage IIB	Y	N	.24	85	75	80			.32			.12		No - Quit Smoking	103	None	None	None
W0196	Carcinoid Tumor: Typical		Y	N	.20	100	80	0			.21			.08		Never Smoked		None	None	None
W0197	Squamous Cell Carcinoma	Stage IIA	Y	N	.38	100	45	10			.22					Yes - Current Smoker	16	None	None	None

Subject ID	Tumor Dx	Clinical Stage	Frozen Tumor Collected	NeoAdj. Therapy	Initial Tumor Tissue Weight (g)	Tumor Area	Tumor Cellularity	Tumor Necrosis	# Banked Tumor Aliquots	# Tumor Molecular Aliquots	Initial Normal Tissue Weight (g)	# Banked Normal Aliquots	# Normal Molecular Aliquots	Initial Bronchus Tissue Weight (g)	# Banked Bronchus Aliquots	Smoking Hx	Pack/Yr	Military Service	Military Exposures	Civilian Exposures
W0199	Adenocarcinoma	Stage IIB	Y	N	1.16	100	90	0			.62					Yes - Current Smoker	51	None	None	None
W0200	Adenocarcinoma: Mucinous Features	Stage IIB	Y	N	.43	100	95	0			.42			.10		Yes - Current Smoker	40	None	None	None
W0201	Bronchioalveolar Carcinoma	Stage IIB	Y	N	.29	95	90	0			.24			.19		Never Smoked		None	None	None
W0202	Squamous Cell Carcinoma	Stage	N	N	.55						.45			.25		Yes - Current Smoker	100	None	None	None
W0203	Squamous Cell Carcinoma	Stage IB	Y	N	.41	100	50	0			.92			.28		Yes - Current Smoker	20	None	None	None
W0208	Adenocarcinoma	Stage IIA	Y	N	.21	100	40	0			.33			.13		No - Quit Smoking	68	None	None	None
W0209	Adenocarcinoma	Stage IB	Y	N	.22	33	30	0			.15			.39		No - Quit Smoking	60	None	None	None
W0213	Adenosquamous Carcinoma	Stage IA	Y	N	.24	100	95	0			.18					Never Smoked		None	None	None
W0216	Adenocarcinoma	Stage IB	Y	N	.14	100	50	10			.16			.04		Never Smoked		None	None	None
W0217	Adenocarcinoma	Stage IA	Y	N	.35	80	30	0			.22					No - Quit Smoking	40	MB	Asbestos, Depleted Uranium, Jet fuel, Nuclear weapons, Nuclear-powered engines, Radon, Second-hand smoke	Asbestos, Depleted Uranium, Jet fuel, Nuclear weapons, Nuclear-powered engines, Radon, Second-hand smoke
W0218	Squamous Cell Carcinoma	Stage IA	Y	N	.11	100	80	0			.25					No - Quit Smoking	20	NG		